

06/03/99 - DIV
09/16/98 - CIP
Art Unit: 1648
03/10/98 - 371
03/04/97 - PROV

In the Claims

1,5,8-13, 20-33, 35

Please replace all prior versions, and listings, of claims in the application with the following list of claims:

1. (Previously Presented) A method of inducing an antigen specific immune response in a subject, comprising:

i) administering to the subject in order to induce an antigen specific immune response an antigen and a combination of adjuvants, wherein the combination of adjuvants includes at least one oligonucleotide containing at least one unmethylated CpG dinucleotide and at least one non-nucleic acid adjuvant, wherein the non-nucleic acid adjuvant is a non-saponin immune stimulating adjuvant wherein the combination of adjuvants is administered in an effective amount for inducing a synergistic adjuvant response and wherein the oligonucleotide is 8-100 nucleotides in length and has at least one phosphate backbone modification)

→ TMI I.R.
2-4. (Cancelled)

TABLE I : 98 STRUCTURES CpG ODN (pp 42-44)
Ag: LONG LIST (Jr 22-22)

5. (Previously Presented) The method of claim 1, wherein the immune stimulating adjuvant is selected from the group consisting of PCPP polymer, derivatives of lipopolysaccharides, MPL, MDP, t-MDP, OM-174 and *Leishmania* elongation factor.

6-7. (Cancelled)

8. (Original) The method of claim 1, wherein the combination of adjuvants is administered with a priming dose of antigen.

9. (Original) The method of claim 1, wherein the combination of adjuvants is administered with a boost dose of antigen.

CpG DINUCLEOTIDE

883514

ODN #1826 (802 86)
2006 (77)
1968 (72)

ONLY EXAMPLES

of CpG HAVE DEF. PROP.
ADJUVANT REPORTS
ARE UNPREDICTABLE

ALUM + HBS Ag + CpG ODN → 500-1000 × ↑
(7x) (32x)

Inne Johnson 558 fed. 2d.
1008, CCPA 1977

10. (Original) The method of claim 8, wherein the subject is administered a boost dose of antigen and oligonucleotide containing at least one unmethylated CpG dinucleotide after the priming dose.

11. (Original) The method of claim 9, wherein the subject is administered a priming dose of antigen and oligonucleotide containing at least one unmethylated CpG dinucleotide before the boost dose.

12. (Original) The method of claim 1, wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a sequence including at least the following formula:

5' X₁ X₂CGX₃ X₄ 3'

wherein C and G are unmethylated, wherein X₁X₂ and X₃X₄ are nucleotides.

13. (Original) The method of claim 12, wherein the 5' X₁ X₂CGX₃ X₄ 3' sequence is a non-palindromic sequence.

14-19. (Cancelled)

20. (Original) The method of claim 12, wherein X₁X₂ are nucleotides selected from the group consisting of: GpT, GpG, GpA, ApA, ApT, ApG, CpT, CpA, CpG, TpA, TpT, and TpG; and X₃X₄ are nucleotides selected from the group consisting of: TpT, CpT, ApT, TpG, ApG, CpG, TpC, ApC, CpC, TpA, ApA, and CpA.

21. (Original) The method of claim 12, wherein X₁X₂ are selected from the group consisting of GpA and GpT and X₃X₄ are TpT.

22. (Original) The method of claim 12, wherein X₁X₂ are both purines and X₃X₄ are both pyrimidines.

23. (Original) The method of claim 12, wherein X₂ is a T and X₃ is a pyrimidine.

24. (Original) The method of claim 12, wherein the oligonucleotide is 8 to 40 nucleotides in length.

25. (Original) The method of claim 12, wherein the oligonucleotide is isolated.

26. (Original) The method of claim 12, wherein the oligonucleotide is a synthetic oligonucleotide.

27. (Original) The method of claim 1, wherein the subject is an infant.

28. (Original) The method of claim 1, wherein the antigen is derived from an infectious organism selected from the group consisting of a virus, bacterium, fungus and parasite.

29. (Original) The method of claim 1, wherein the antigen is a tumor antigen.

30. (Original) The method of claim 1, wherein the antigen is an allergen.

31. (Original) The method of claim 1, wherein the antigen is in the form of a crude extract.

32. (Original) The method of claim 1, wherein the antigen is in the form of a purified molecule including a protein or a polysaccharide.

33. (Original) The method of claim 1, wherein the antigen is in the form of a recombinant molecule including a protein, polypeptide, peptide or peptide mimic of a polysaccharide antigen.

34. (Cancelled)

35. (Original) The method of claim 1, wherein the non-nucleic acid adjuvant by itself gives a Th1 immune response (e.g., MPL) but when used in combination with the CpG oligonucleotide gives a stronger Th1 response.

36-98. (Cancelled)